

FAIL FIXED FUEL METERING DEVICE AND METHOD FOR
PROVIDING BUMPLESS TRANSFER TO BACKUP

ABSTRACT

A fuel metering device (101) and method for metering fuel to an engine (129) provides bumpless transfer to a backup mode. A common cavity (125) provides pressure relief, fuel metering and bypass of fuel flow. A metering valve (120) for scheduling fuel flow to the engine (129) and the metering valve (120) is controlled in either a primary mode or a backup mode. A pressure relief valve (123) limits the maximum pump discharge pressure of a fuel pump. A bypass valve (122) maintains a constant pressure across the metering valve (120) by redirecting non-metered fuel flow back to a pump stage inlet. An electrical clutch (131) determines whether the metering valve (120) function is accomplished by said primary mode or said backup mode. Bumpless transfer to a backup is accomplished automatically.